



## What is a Standard Part?

Mentioning standard parts ~~usually~~ brings to mind the thought of merely "nuts or bolts," when, in fact, other types of parts as well as materials used to produce aviation parts may fall under the category of "standard part."

A standard part is a part or material that conforms to an established industry or U.S. government published specification. The FAA's acceptance of a "standard part" as an approved part is based on the certification that the part has been designed and produced in accordance with an independent established set of specifications and criteria.

"Standard part" is not defined in Title 14 of the Code of Federal Regulations. Section 21.303(b) provides four exceptions to the requirement to hold a Parts Manufacturer Approval to produce replacement and modification aircraft parts. Section 21.303(b)(4) provides the exception for standard parts (bolts and nuts) - parts that conform to established industry or U.S. specifications.

The FAA has published a non-regulatory definition of "standard part" as well as interpretative information regarding what criteria parts must meet to come under the standard part category. Advisory Circular 21-29B, Detecting and Reporting Suspected Unapproved Parts, provides the following definition of standard part:

A part manufactured in complete compliance with an established industry or U.S. government specification which includes design, manufacturing, test and acceptance criteria, and uniform identification requirements; or for a type of part which the Administrator has found demonstrates conformity based solely on meeting performance criteria, is in complete compliance with an established industry or U.S. government specification which contains performance criteria, test and acceptance criteria, and uniform identification requirements. The specification must include all information necessary to produce and conform the part and be published so that any party may manufacture the part. Examples include, but are not limited to, National Aerospace Standard (NAS), Army-Navy Aeronautical Standard (AN), Society of Automotive Engineers (SAE), SAE Sematec, Joint Electron Device Engineering Council, Joint Electron Tube Engineering Council, and American National Standards Institute (ANSI).

This definition incorporates two categories of standard part criteria. Initially, the FAA recognized as "standard" those parts that met published specifications that included information clearly establishing design, materials, manufacture, and uniform identification requirements.

The FAA issued a subsequent interpretation of "standard part" that provided for a class of parts that conform to a standard not based on their physical configuration but on their meeting a specified performance criterion. The FAA stated this second category of "standard parts" is best exemplified by discrete electrical and electronic parts. See 62 Fed. Reg. 9,923 (1997). The FAA must make a specific finding of applicability to a class of parts before the "performance only" criteria can be used.

## Regulatory Oversight

The FAA does not certificate manufacturers of standard parts. However, when a type design calls for the installation of a standard part, the FAA may conduct surveillance of the manufacturer and/or supplier of that part.

The FAA has previously noted that standard part manufacturers are subject to continuing in-depth audits by their customers, and these audits provide an appropriate degree of confidence that the standards are being met. A standard part must conform to the designated part specification in order to qualify as a standard part. Accordingly, the production of a standard part offered for sale for installation on a type-certified product where that part does not conform to the standard part specification may be a violation of section 21.303(a).

Recognizing that billions of fasteners are used in the American economy each year, Congress enacted the Fastener Quality Act (FQA) (15 U.S.C. 5401). Enacted in 1990, the FQA has been subsequently amended several times; however, the basic intent ~~remains the same, i.e., to ensure the quality of fasteners and to~~

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### Definition

Fastener Quality Act

Aircraft Safety Act of 2000 *✓ 8*

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prevent mismarked, misrepresented and counterfeit fasteners from entering the commercial market. Numerous articles have been written on the FQA; however, several points are noteworthy.

For purposes of the FQA, fastener is defined as:

A metallic screw, nut, bolt, or stud having internal or external threads, with a nominal diameter of 6 millimeters or greater, in the case of such items described in metric terms, or  $\frac{1}{4}$  inch or greater, in the case of such items described in terms of the English system of measurement, or a load-indicating washer, that is through-hardened or represented as meeting a consensus standard that calls for through-hardening, and that is grade identification marked or represented as meeting a consensus standard that requires grade identification marking....

The FQA then provides various types and configurations of fasteners that are exempt from the Act, including fasteners specifically manufactured for use on an aircraft if the quality and suitability of those fasteners have been approved by the FAA or by a foreign airworthiness authority. Although the U.S. Department of Commerce is responsible for implementation and enforcement of the FQA, this exemption provides that the FAA has the regulatory oversight and enforcement for fasteners approved for installation on aircraft.

#### Standard or ???

Standard parts are produced in accordance with *published* specifications and criteria. Incident to an enhanced enforcement program initiated by the FAA to bring parts manufacturers into compliance with section 21.303, it became obvious that many specialized fasteners, seals, and bearings are manufactured to specifications that are known only to the manufacturer. Obtaining a Parts Manufacturer Approval for these specialized groups of fasteners, seals, and bearings would not have been practical, and yet these groups of parts fell outside the criteria for standard part since their specifications are not published.

To provide approvals under which these groups of parts could be produced, the FAA issued the following Technical Standard Orders (TSO): TSO-C148, Aircraft Fasteners; TSO-C149, Aircraft Bearings; and TSO-C150, Aircraft Seals. Authorizations for these TSO's are not issued for standard parts nor for parts used in critical applications. In contrast to "standard part" nuts, bolts, etc., these fasteners, bearings, and seals must meet the TSO minimum performance, marking and installation approval requirements.

Eleven companies currently hold authorization for TSO-C148; six companies hold authorization for TSO-C149; and four companies hold authorization for TSO-C150. Although only 21 companies hold these authorizations, hundreds of thousands of individual parts are produced under the TSO's. Producers holding a TSO authorization are production approval holders and are subject to FAA regulatory oversight and enforcement.

#### Considerations

When purchasing and installing standard parts, consider the following:

- A Certificate of Conformity (C of C) should be provided by the producer of a standard part.
- A standard part should carry a mark indicating the part has been produced in accordance with the specification requirements.
- A part is no longer considered "standard" if it is used in a critical application that imposes qualification or quality control requirements beyond the standard specification.
- To facilitate traceability, commingling like fasteners from different lots is not recommended.
- Section 21.303(b)(4) provides that acceptable government specifications are limited to those published by the U.S. Government. Parts produced to a foreign standard may, however, be acceptable for installation on foreign type-certificated aircraft and products.
- Installation of a standard part must be in accordance with the requirements of part 43. Generally, a standard part may be replaced with an identical standard part; however, substituting standard parts

would require a demonstration of acceptability in accordance with part 43.

- The purpose of the recently enacted "Aircraft Safety Act of 2000" is to safeguard against the dangers posed by the installation of nonconforming, defective or counterfeit aircraft and space vehicle parts. This criminal law prohibits false or fraudulent representations regarding the sale or installation of aircraft and space vehicle parts. The law provides penalties that include fines up to \$20 million and/or imprisonment for a term of years to life. Specifically, the law prohibits any falsification or concealment of any material fact concerning any aircraft or space vehicle part; prohibits any materially fraudulent representation concerning any aircraft or space vehicle part; and prohibits the making or use of any materially false writing, entry, certification, document, record, data plate, label, or electronic communication concerning any aircraft or space vehicle part. The law also prohibits fraudulent representations relating to the export, import, introduction, sale, trade or installation of aircraft or space vehicle parts. Enacted as Section 506 of the Federal Aviation Administration Authorization Act, the new law will be codified as Chapter 2 of Title 18, United States Code, which deals with aircraft and motor vehicle offenses.

### Current Issues Involving Standard Parts

9/9/00

A Suspected Unapproved Parts (SUP) investigation is addressing non-conforming bulk wire rope, a material produced to a military specification that may be used in the fabrication of aircraft control cables. Click [here](#) to view photographs that illustrate some noted differences between the "approved" and unapproved wire rope. To obtain additional details about the wire rope, view Unapproved Parts Notification (UPN) 99-273 [\[.txt\]](#) [\[.doc\]](#), issued May 18, 2000, to alert the industry.

### Alerts

There are several resources available to obtain additional information on unapproved parts. Alerts issued by the FAA can be found in [AC 43.16](#), and on this website under [Unapproved Parts](#). The Government Industry Data Exchange Program ([GIDEP](#)) also maintains a database of various alert info.

### Additional Information

Reference material in [Advisory Circular 65-9, Airframe and Powerplant Mechanics General Handbook](#), [Chapter 5](#) [1.9 MB file] and [Chapter 6](#) [3.2 MB file], contains additional information on parts and materials that are manufactured and conform to established industry or U.S. Government standards.